

Title (en)

HIGHLY HEAT CONDUCTIVE DEVICE SUBSTRATE AND METHOD FOR PRODUCING SAME

Title (de)

HOCHWÄRMELEITENDES VORRICHTUNGSSUBSTRAT UND VERFAHREN ZUR HERSTELLUNG DAVON

Title (fr)

SUBSTRAT DE DISPOSITIF HAUTEMENT THERMOCONDUCTEUR ET SON PROCÉDÉ DE PRODUCTION

Publication

**EP 3654366 A1 20200520 (EN)**

Application

**EP 18832873 A 20180710**

Priority

- JP 2017138026 A 20170714
- JP 2018026068 W 20180710

Abstract (en)

Provided are a device substrate with high thermal conductivity, with high heat dissipation, and with a small loss at high frequencies, and a method of manufacturing the device substrate. A device substrate 1 of the present invention can be manufactured by: provisionally bonding a Si device layer side of an SOI device substrate 10 to a support substrate 20 using a provisional bonding adhesive 31, the SOI device substrate including a Si base substrate 11, a Box layer 12 formed on the Si base substrate, having high thermal conductivity, and being an electrical insulator, and a Si device layer 13 formed on the Box layer; removing the Si base substrate 11 of the provisionally bonded SOI device substrate until the Box layer is exposed, thereby obtaining a thinned device wafer 10a; transfer-bonding the Box layer side of the thinned device wafer and a transfer substrate 40 to each other using a transfer adhesive 32 having a heat-resistant temperature of at least 150°C by applying heat and pressure, the transfer substrate having high thermal conductivity and being an electrical insulator; and separating the support substrate 20.

IPC 8 full level

**H01L 21/02** (2006.01); **H01L 27/12** (2006.01)

CPC (source: EP KR US)

**C09J 163/00** (2013.01 - KR); **H01L 21/02** (2013.01 - EP); **H01L 21/02164** (2013.01 - US); **H01L 21/2007** (2013.01 - EP US); **H01L 21/304** (2013.01 - US); **H01L 21/76251** (2013.01 - KR); **H01L 21/76254** (2013.01 - US); **H01L 21/76262** (2013.01 - US); **H01L 27/12** (2013.01 - EP KR); **H01L 27/1203** (2013.01 - US); **C09J 2203/326** (2013.01 - KR); **C09J 2301/312** (2020.08 - KR); **H01L 21/76251** (2013.01 - EP); **H01L 21/76256** (2013.01 - EP)

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

**EP 3654366 A1 20200520**; **EP 3654366 A4 20210414**; **EP 3654366 B1 20240807**; CN 110892506 A 20200317; CN 110892506 B 20240409; JP 6854895 B2 20210407; JP WO2019013212 A1 20200416; KR 102558905 B1 20230721; KR 20200026822 A 20200311; SG 10201913156W A 20200227; SG 11201912503W A 20200130; TW 201908124 A 20190301; TW I798236 B 20230411; US 11361969 B2 20220614; US 2020227263 A1 20200716; WO 2019013212 A1 20190117

DOCDB simple family (application)

**EP 18832873 A 20180710**; CN 201880046539 A 20180710; JP 2018026068 W 20180710; JP 2019529733 A 20180710; KR 20197037807 A 20180710; SG 10201913156W A 20180710; SG 11201912503W A 20180710; TW 107124206 A 20180713; US 201816626154 A 20180710